5.0 Regulatory Applicability Analysis

In preparing and submitting this application, Idaho Supreme has evaluated the applicability of state and Federal regulations to the Tier I permit. Each subsection contains the applicability analysis for a specific subset of air quality regulations, as follows:

- Subsection 5.1 – Applicable and Inapplicable IDAPA 58.01.01 Requirements
- Subsection 5.2 – Applicable and Inapplicable Federal Air Quality Regulations – General
- Subsection 5.3 – Applicable and Inapplicable New Source Performance Standards (40 CFR Part 60)
- Subsection 5.4 – Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
- Subsection 5.5 – Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR Part 63)
- Subsection 5.6 – Specific Applicable and Inapplicable Requirement Discussion

5.1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Table 5-1 cites the applicable and inapplicable requirements of the Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01) for air emitting activities at Idaho Supreme:

Table 5-1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Citation under IDAPA 58.01.01	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
000	LEGAL AUTHORITY General Applicability	N/A	No	N/A	No substantive requirements (Note B)
001	TITLE AND SCOPE General Applicability	N/A	No	N/A	No substantive requirements (Note B)
002	WRITTEN INTERPRETATIONS General Applicability	N/A	No	N/A	No substantive requirements (Note B)
003	ADMINISTRATIVE APPEALS General Applicability	N/A	Yes	N/A	No substantive requirements
004	CATCHLINES General Applicability	N/A	Yes	N/A	No substantive requirements
005	DEFINITIONS General Applicability	N/A	Yes	N/A	No substantive requirements
006	GENERAL DEFINITIONS General Applicability	N/A	Yes	N/A	No substantive requirements
007	DEFINITIONS FOR THE PURPOSES OF SECTIONS 200 THROUGH 225 AND 400 THROUGH 461 General Applicability	N/A	Yes	N/A	400-461 facility not in source category No requirements given
008	DEFINITIONS FOR THE PURPOSES OF SECTIONS 300 THROUGH 386	N/A	Yes	N/A	No substantive requirements

Table 5-1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Citation under IDAPA 58.01.01	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
	General Applicability				
009	DEFINITIONS FOR THE PURPOSES OF 40 CFR PART 60 General Applicability	N/A	Yes	N/A	No substantive requirements
010	DEFINITIONS FOR THE PURPOSES OF 40 CFR PART 61 AND 40 CFR PART 63	N/A	Yes	N/A	No substantive requirements
011	DEFINITIONS FOR THE PURPOSE OF SECTIONS 790 THROUGH 799	N/A	No	N/A	(Note D)
106	ABBREVIATIONS General Applicability	N/A	Yes	N/A	No substantive requirements
107	INCORPORATIONS BY REFERENCE General Applicability	N/A	Yes	N/A	No substantive requirements
121	COMPLIANCE REQUIREMENTS BY DEQ General Applicability	As specified for individual requirements	Yes	Yes	Requirements determined by the Department stated elsewhere in the Tier I permit.
122	INFORMATION ORDERS BY DEQ General Applicability	N/A	No	N/A	(Note B)
123	CERTIFICATION OF DOCUMENTS General Applicability	Recordkeeping	Yes	Yes	
124	TRUTH, ACCURACY AND COMPLETENESS OF DOCUMENTS General Applicability	Recordkeeping	Yes	Yes	
125	FALSE STATEMENTS General Applicability	Recordkeeping	Yes	Yes	
126	TAMPERING General Applicability	Recordkeeping	Yes	Yes	
127	FORMAT OF RESPONSES General Applicability	Recordkeeping	Yes	Yes	
128	CONFIDENTIAL INFORMATION General Applicability	Recordkeeping	Yes	Yes	
130-136	UPSET, BREAKDOWN, AND EXCESS EMISSIONS REQUIREMENTS	Reporting/Recordkeeping	Yes	Yes	
140-149	VARIANCE PROCEDURES and PETITIONS General Applicability	N/A	No	N/A	(Notes A,C)
155	CIRCUMVENTION General Applicability	Recordkeeping	Yes	Yes	No installation or use of any device conceals an emission of air pollutants.
156	TOTAL COMPLIANCE General Applicability	Recordkeeping	Yes	Yes	
157	TEST METHODS AND PROCEDURES General Applicability	Recordkeeping	Yes	Yes	
160	PROVISIONS GOVERNING SPECIFIC ACTIVITIES AND CONDITIONS General Applicability	Recordkeeping	Yes	Yes	
161	TOXIC SUBSTANCES General Applicability	Recordkeeping	Yes	Yes	(Note A)
162	MODIFYING PHYSICAL CONDITIONS General Applicability	N/A	No	N/A	(Note B)
163	SOURCE DENSITY	N/A	No	N/A	(Note B)
164	POLYCHLORINATED BIPHENYLS (PCBS) Requirements or Standards: Prohibits burning PCB containing materials, in quantities greater that five (5) ppm, except for disposal.	N/A	No	N/A	(Note F)

Table 5-1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Citation under IDAPA 58.01.01	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
200 - 203	PROCEDURES AND REQUIREMENTS FOR PERMITS TO CONSTRUCT General Applicability	Reporting/Recordkeeping	Yes	Yes	
204	PERMIT REQUIREMENTS FOR NEW MAJOR FACILITIES OR MAJOR MODIFICATIONS IN NONATTAINMENT AREAS	N/A	No	N/A	
205	PERMIT REQUIREMENTS FOR NEW MAJOR FACILITIES OR MAJOR MODIFICATIONS IN ATTAINMENT OR UNCLASSIFIABLE AREAS	N/A	Yes	N/A	
206 - 208	OPTIONAL OFFSETS FOR PERMITS TO CONSTRUCT; EMISSION REDUCTION CREDIT; NET AIR QUALITY BENEFIT	N/A	No	N/A	(Note C)
209	PROCEDURES FOR ISSUING PERMITS	N/A	No	N/A	(Note B)
210	DEMONSTRATION OF PRECONSTRUCTION COMPLIANCE WITH TOXIC STANDARDS	Recordkeeping/Reporting	Yes	Yes	
211	CONDITIONS FOR PERMITS TO CONSTRUCT	N/A	No	N/A	(Note B)
212	OBLIGATION TO COMPLY	Specific for each requirement	Yes	Yes	
213	PRE-PERMIT CONSTRUCTION	N/A	No	N/A	(Notes C, D)
214	DEMONSTRATION OF PRECONSTRUCTION COMPLIANCE FOR NEW AND RECONSTRUCTED SOURCES OF HAZARDOUS AIR POLLUTANTS	N/A	No	N/A	(Note D)
220 – 223	EXEMPTIONS FROM PERMIT TO CONSTRUCT REQUIREMENTS	N/A	No	N/A	(Note C, D)
224 - 227	FEES	N/A	Yes	Yes	Fees will be paid.
228	APPEALS	N/A	N/A	N/A	
300-316	PROCEDURES AND REQUIREMENTS FOR TIER I OPERATING PERMITS General Applicability	All	Yes	Yes	
317	INSIGNIFICANT ACTIVITIES	None	Yes	Yes	Insignificant activities have no applicable requirements
321	TIER I OPERATING PERMIT CONTENTS General Applicability	All	Yes	Yes	
322	STANDARD CONTENTS OF TIER I OPERATING PERMITS General Applicability to Tier I Sources	N/A	No	N/A	(Note B)
325	ADDITIONAL CONTENTS OF TIER I OPERATING PERMITS - PERMIT SHIELD General Applicability to Tier I Sources	N/A	Yes	N/A	No substantive requirements
332	EMERGENCY AS AFFIRMATIVE DEFENSE REGARDING EXCESS EMISSIONS. General Applicability to Tier I Sources	Reporting/Recordkeeping	Yes	Yes	
335	GENERAL TIER I OPERATING PERMITS AND AUTHORIZATIONS TO OPERATE	N/A	Yes	Yes	

Table 5-1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Citation under IDAPA 58.01.01	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
336	TIER I OPERATING PERMITS FOR TIER I PORTABLE SOURCES	N/A	No	N/A	(Notes A, D)
360-368	STANDARD PROCESSING OF TIER I OPERATING PERMIT APPLICATIONS General Applicability to Tier I Sources	N/A	No	N/A	(Note B)
369	TIER I OPERATING PERMIT RENEWAL General Applicability to Tier I Sources	N/A	No	N/A	(Note C)
380-386	ALTERATIONS General Applicability to Tier I Sources	N/A	No	N/A	(Note C)
387 - 399	FEES	N/A	Yes	Yes	
400-406	PROCEDURES AND REQUIREMENTS FOR TIER II OPERATING PERMITS	N/A	No	N/A	This is a Tier I application.
407 - 410	FEES	N/A	Yes	Yes	Fee will be paid.
440	REQUIREMENTS FOR ALTERNATIVE EMISSION LIMITS (BUBBLES)	N/A	No	N/A	(Note C)
441	DEMONSTRATION OF AMBIENT EQUIVALENCE	N/A	No	N/A	(Note C)
460-461	REQUIREMENTS FOR EMISSION REDUCTION CREDIT and BANKING EMISSION REDUCTION	N/A	No	N/A	(Note C)
500	REGISTRATION PROCEDURES AND REQUIREMENTS FOR PORTABLE EQUIPMENT	N/A	No	N/A	(Note D)
510	STACK HEIGHTS AND DISPERSION TECHNIQUES	Air Dispersion Modeling; Recordkeeping, Reporting	Yes	Yes	See 511-516
511	APPLICABILITY	Recordkeeping	Yes	Yes	
512	DEFINITIONS	Recordkeeping	Yes	Yes	
513	REQUIREMENTS	Recordkeeping	Yes	Yes	
514	OPPORTUNITY FOR PUBLIC HEARING	N/A	No	No	(Note B)
515	APPROVAL OF FIELD STUDIES AND FLUID MODELS	N/A	No	No	Administrative and/or procedural
516	NO RESTRICTION ON ACTUAL STACK HEIGHT	N/A	Yes	N/A	No substantive requirements
550-561	AIR POLLUTION EMERGENCY RULE	N/A	No	N/A	Applicability is case-by-case
562	SPECIFIC EMERGENCY EPISODE ABATEMENT PLANS FOR POINT SOURCES	N/A	No	N/A	Idahoan Supreme has not been required by the Department to prepare an Emergency Episode Abatement Plan. (Note B)
563 - 574	TRANSPORTATION CONFORMITY	N/A	No	N/A	(Notes C, D)
575-581	AIR QUALITY STANDARDS AND AREA CLASSIFICATION	Air Dispersion Modeling and Monitoring	Yes	Yes	
582	INTERIM CONFORMITY PROVISIONS FOR NORTHERN ADA COUNTY FORMER NON-ATTAINMENT AREA FOR PM-10	N/A	No	N/A	(Note D)
585-586	TOXIC AIR POLLUTANTS NON-CARCINOGENIC INCREMENTS, TOXIC AIR POLLUTANTS CARCINOGENIC INCREMENTS	Recordkeeping/Reporting	Yes	Yes	(Note A)

Table 5-1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Citation under IDAPA 58.01.01	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
587	LISTING OR DELISTING TOXIC AIR POLLUTANT INCREMENTS	N/A	No	N/A	(Note A, C)
590	NEW SOURCE PERFORMANCE STANDARDS	N/A	No	N/A	See specific comments on specific NSPS in Subsection 4.6
591	NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS	N/A	No	N/A	
600-609	RULES FOR CONTROL OF OPEN BURNING	N/A	No	N/A	(Note F)
610	INDUSTRIAL FLARES	N/A	Yes	N/A	No substantive requirements
611-616	RULES FOR CONTROL OF OPEN BURNING	N/A	No	N/A	(Note F)
625	VISIBLE EMISSIONS	Monitoring, Reporting, Recordkeeping	Yes	Yes	A person shall not emit an air pollutant from any point of emission for a period or periods aggregating more that 3 minutes in any 60 minute period which is greater than 20% opacity.
626	GENERAL RESTRICTIONS ON VISIBLE EMISSIONS FROM WIGWAM BURNERS	N/A	No	N/A	(Note B) Facility does not have this emissions unit.
650-651	RULES FOR CONTROL OF FUGITIVE DUST	Reasonable steps taken to control or mitigate fugitive dust	Yes	Yes	Reasonable precautions are utilized to control fugitive emissions at this facility. This is not applicable to any point source.
675	FUEL BURNING EQUIPMENT - PARTICULATE MATTER Facility operates fuel burning equipment.		Yes	Yes	See rules 676-680
676	STANDARDS FOR NEW SOURCES	Recordkeeping	Yes	Yes	
677	STANDARDS FOR MINOR AND EXISTING SOURCES	N/A	No	N/A	(Note D)
678-680	COMBINATIONS OF FUELS	N/A	No	N/A	(Note C)
681	TEST METHODS AND PROCEDURES	Use of required test procedure(s)	Yes	Yes	
700	PARTICULATE MATTER -- PROCESS WEIGHT LIMITATIONS.		Yes	Yes	See rules 701-703
701	PARTICULATE MATTER – NEW EQUIPMENT PROCESS WEIGHT LIMITATIONS.	Monitoring and Testing	Yes	Yes	(Note A)
702	PARTICULATE MATTER -- EXISTING PROCESS WEIGHT LIMITATIONS	Monitoring and Testing	Yes	Yes	(Note A)
703	PARTICULATE MATTER – OTHER PROCESSES	N/A	No	N/A	(Note D)
710	PARTICULATE MATTER – PROCESS EQUIPMENT EMISSION LIMITATIONS ON OR AFTER JULY 1, 2000	Monitoring and Testing	Yes	Yes	
725	RULES FOR SULFUR CONTENT OF FUELS General Applicability	N/A	Yes	N/A	Applies to distillate and residual fuel used by Idaho Supreme.
726	DEFINITIONS AS USED IN SECTIONS 727 THROUGH 729	N/A	No	N/A	(Note E)

Table 5-1 Applicable and Inapplicable IDAPA 58.01.01 Requirements

Citation under IDAPA 58.01.01	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
727	RESIDUAL FUEL OILS	N/A	Yes	N/A	
728	DISTILLATE FUEL	N/A	Yes	N/A	
729	COAL	N/A	No	N/A	(Note E)
750-751	RULES FOR CONTROL OF FLUORIDE EMISSIONS	Monitoring and Testing	N/A	N/A	
775-776	RULES FOR CONTROL OF ODORS General Applicability	Idaho Supreme will investigate any odor complaint or identified issue.	Yes	N/A	(Note A); No substantive requirements for regulated units or activities.
785-787	RULES FOR CONTROL OF INCINERATORS	N/A	No	N/A	(Note D)
790 – 802	EMISSION STANDARDS FOR CONTROL OF NONMETALLIC MINERAL PROCESSING PLANTS	N/A	No	N/A	(Note D)
805-808	RULES FOR CONTROL OF HOT-MIX ASPHALT PLANTS	N/A	No	N/A	(Note D)
815-826	RULES FOR CONTROL OF KRAFT PULPING MILLS	N/A	No	N/A	(Note D)
835-839	RULES FOR CONTROL OF RENDERING PLANTS	N/A	No	N/A	(Note D)
845-848	RULES FOR CONTROL OF SULFUR OXIDE EMISSIONS FROM SULFURIC ACID PLANTS	N/A	No	N/A	(Note D); Does not apply to the Granulation III plant
855-858	COMBINED ZINC AND LEAD SMELTERS	N/A	No	N/A	(Note D)
859	STANDARDS OF PERFORMANCE FOR MUNICIPAL SOLID WASTE LANDFILLS THAT COMMENCED CONSTRUCTION.....MAY 30, 1991	N/A	No	N/A	(Note D)
860	EMISSION GUIDELINES FOR MUNICIPAL SOLID WASTE LANDFILLS THAT COMMENCED CONSTRUCTION.....MAY 30, 1991	N/A	No	N/A	(Note D)
861	STANDARDS OF PERFORMANCE FOR HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS THAT COMMENCED CONSTRUCTION.....MARCH 16, 1998	N/A	No	N/A	(Note D)
862	EMISSION GUIDELINES FOR HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS THAT COMMENCED CONSTRUCTION BEFORE JUNE 20, 1996	N/A	No	N/A	(Note D)

APPLICABILITY EXPLANATION CODES

N/A Not Applicable

A - State only.
B - Regulation applies to regulatory authority.
C - Currently there are no projects or circumstances existing at the facility that would subject Idaho Supreme to these provisions; however, Idaho Supreme may use these provisions in the future if the circumstances arise.
D - Facility is not in this source category.
E - Facility does not use this fuel type.
F - Facility does not conduct this activity.

5.2 Applicable and Inapplicable Federal Air Quality Regulations – General

Table 5-2 cites applicable and inapplicable Federal Air Quality regulations provided in Title 40 of the Code of federal Regulations (40 CFR).

Table 5-2 Applicable and Inapplicable 40 CFR Regulations

Citation under Federal Regulations	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
40 CFR Part 50	National Primary and Secondary Ambient Air Quality Standards	N/A	No	N/A	(Note A)
40 CFR Part 51	Requirements for Preparation, Adoption, and Submittal of Implementation Plans	N/A	No	N/A	(Note A)
40 CFR Part 52	Approval and Promulgation of Implementation Plans	N/A	No	N/A	(Notes A, C)
40 CFR Part 53	Ambient Air Monitoring Reference and Equivalent Methods	N/A	No	N/A	(Note B)
40 CFR Part 54	Prior Notice of Citizen Suits	N/A	No	N/A	Rules govern citizen suit actions.
40 CFR Part 55	Outer Continental Shelf Air Regulations	N/A	No	N/A	Rules govern Outer Continental Shelf activities.
40 CFR Part 56	Regional Consistency	N/A	No	N/A	(Note A)
40 CFR Part 57	Primary Nonferrous Smelter Orders	N/A	No	N/A	(Note C)
40 CFR Part 58	Ambient Air Quality Surveillance	N/A	No	N/A	Ambient air quality surveillance is not required at this facility.
40 CFR 59	National Volatile Organic Compound Emission Standards for Consumer and Commercial Products	N/A	No	N/A	(Note C)
40 CFR Part 60	Standards of Performance for New Stationary Sources	N/A	Yes	Yes	NSPS Subpart Dc applies to Boiler #3. NSPS Subpart Db applies to Boiler #4. Subpart Kb applies to tanks.
40 CFR Part 61	National Emission Standards for Hazardous Air Pollutants	N/A	No	N/A	NESHAPs do not apply (Note C)
40 CFR Part 62	Approval and Promulgation of State Plans for Designated Facilities and Pollutants	N/A	No	N/A	(Note A)
40 CFR Part 63	National Emission Standards for Hazardous Air Pollutants for Source Categories	N/A	No	N/A	NESHAPs do not apply (Note C)
40 CFR Part 64	Compliance Assurance Monitoring	N/A	No	N/A	(Note C); see discussion below.
40 CFR Part 65	Consolidated Federal Air Program	N/A	No	N/A	(Note A)
40 CFR Part 66	Assessment and Collection of Noncompliance Penalties by EPA	N/A	No	N/A	(Note A)
40 CFR Part 67	EPA Approval of State Noncompliance Penalty Program	N/A	No	N/A	(Note A)
40 CFR Part 68	Chemical Accident Prevention	N/A	No	N/A	

Table 5-2 Applicable and Inapplicable 40 CFR Regulations

Citation under Federal Regulations	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
	Provisions				
40 CFR Part 69	Special Exemptions from Requirements of the Clean Air Act	N/A	No	N/A	(Note A)
40 CFR Part 70	State Operating Permit Programs	N/A	No	N/A	(Note A)
40 CFR Part 71	Federal Operating Permit Programs	N/A	No	N/A	(Note A)
40 CFR Part 72	Permits Regulation	N/A	No	N/A	(Note A)
40 CFR Part 73	Sulfur Dioxide Allowance System	N/A	No	N/A	(Note C)
40 CFR Part 74	Sulfur Dioxide Opt-Ins	N/A	No	N/A	(Note C)
40 CFR Part 75	Continuous Emission Monitoring	N/A	No	N/A	(Note C)
40 CFR Part 76	Acid Rain Nitrogen Oxides Emission Reduction Program	N/A	No	N/A	(Note C)
40 CFR Part 77	Excess Emissions	N/A	No	N/A	(Note C)
40 CFR Part 78	Appeal Procedures for Acid Rain Program	N/A	No	N/A	(Note C)
40 CFR Part 79	Registration of Fuels and Fuel Additives	N/A	No	N/A	(Note C)
40 CFR Part 80	Regulation of Fuels and Fuel Additives	N/A	No	N/A	(Note C)
40 CFR Part 81	Designation of Areas for Air Quality Planning Purposes	N/A	No	N/A	(Note A)
40 CFR Part 82, Subparts A – E; G-H	Protection of Stratospheric Ozone	N/A	No	N/A	(Note C)
40 CFR Part 82, Subpart F	Protection of Stratospheric Ozone; Recycling and Emissions Reduction	Recordkeeping	Yes	Yes	
40 CFR Part 85	Control of Air Pollution from Mobile Sources	N/A	No	N/A	(Note C)
40 CFR Part 86	Control of Emissions from New and In-Use Highway Vehicles and Engines	N/A	No	N/A	(Note C)
40 CFR Part 87	Control of Air Pollution from Aircraft and Aircraft Engines	N/A	No	N/A	(Note C)
40 CFR Part 88	Clean-Fuel Engines	N/A	No	N/A	(Note C)
40 CFR Part 89	Control of Emissions from New and In-Use Non-road Compression-Ignition Engines	N/A	No	N/A	(Note C)
40 CFR Part 90	Control of Emissions from Non-road Spark-Ignition Engines at or Below 19 Kilowatts	N/A	No	N/A	(Note C)
40 CFR Part 91	Control of Emissions from Marine Spark Ignition Engines	N/A	No	N/A	(Note C)
40 CFR Part 92	Control of Air Pollution from Locomotives and Locomotive Engines	N/A	No	N/A	(Note C)
40 CFR Part 93	Determining Conformity of Federal Actions to State or Federal Implementation Plans	N/A	No	N/A	(Notes A,C)
40 CFR Part 94	Control of Emissions from Marine Compression-Ignition Engines				
40 CFR Part 95	Mandatory Patent Licenses	N/A	No	N/A	(Note C)
40 CFR Part 96	NO_x Budget Trading Program	N/A	No	N/A	(Notes A, C)

Table 5-2 Applicable and Inapplicable 40 CFR Regulations

Citation under Federal Regulations	Title	Compliance Determination Method (Record Keeping, Monitoring, Reporting, Test Method)	Applicable Yes or No	In Compliance Yes or No	Explanation Code and/or Additional Information
	for State Implementation Plant				
40 CFR Part 97	Federal NOx Budget Trading Program	N/A	No	N/A	(Note C)

APPLICABILITY EXPLANATION CODES

A - Regulation applies to regulatory authority.

B - Rules governing ambient air quality standards and/or monitoring or definitions of criteria for air pollution emergency purposes and do not apply to individual sources.

C - Facility is not in this source category.

5.3 Applicable and Inapplicable New Source Performance Standards (40 CFR Part 60)

Table 5-3 cites applicable and inapplicable New Source Performance Standards given in 40 CFR Part 60 (IDAPA 58.01.01.590).

Table 5-3 Applicable and Non-Applicable New Source Performance Standards (40 CFR Part 60)

Rule Description - 40 CFR Part 60 - New Source Performance Standards	Applicable?
Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994 (Subpart Cb)	No
Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Subpart Cc)	No
Emission Guidelines and Compliance Times for Sulfuric Acid Production Plants (Subpart Cd)	No
Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators (Subpart Ce)	No
Fossil fuel-fired Steam Generators (Subpart D)	No
Electric Utility Steam Generating Units (Subpart Da)	No
Industrial-Commercial-Institutional Steam Generating Units (Subpart Db)	Yes – See discussion below
Small Industrial-Commercial-Institutional Steam Generating Units (Subpart Dc)	Yes – See discussion below
Incinerators (Subpart E)	No
Municipal waste combustors (Subpart Ea)	No
Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 24, 1994 (Subpart Eb)	No
Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20,1996 (Subpart Ec)	No
Portland cement plants (Subpart F)	No
Nitric Acid Plants (Subpart G)	No
Sulfuric Acid Plants (Subpart H)	No
Asphalt Concrete Plants (Subpart I)	No
Petroleum refineries (Subpart J)	No
Storage Vessels for Petroleum Liquids--for Construction, Reconstruction, or Modification, Commenced after June 11, 1973, and prior to May 19, 1978 (Subpart K)	No
Storage Vessels for Petroleum Liquids--for Construction, Reconstruction, or	No

Table 5-3 Applicable and Non-Applicable New Source Performance Standards (40 CFR Part 60)

Rule Description - 40 CFR Part 60 - New Source Performance Standards	Applicable?
Modification, Commenced after May 18, 1978, and Prior to July 23, 1984 (Subpart Ka)	
Volatile Organic Liquid Storage Vessels (including petroleum liquid storage vessels) for which construction, reconstruction, or modification commenced after July 23, 1984 (Subpart Kb)	Yes – See discussion below
Secondary Lead Smelters (Subpart L)	No
Secondary Brass and Bronze Ingot Production Plants (Subpart M)	No
Iron and Steel Plants (Primary Emissions from Basic Oxygen Furnaces Constructed after June 11, 1973) (Subpart N)	No
Iron and steel plants (secondary emissions from basic oxygen furnaces constructed after January 20, 1983) (Subpart Na)	No
Sewage Treatment Plants (Subpart O)	No
Primary Smelters: Copper (Subpart P)	No
Primary Smelters: Zinc (Subpart Q)	No
Primary Smelters: Lead (Subpart R)	No
Primary Aluminum Reduction Plants (Subpart S)	No
Wet process Phosphoric Acid Plants (Subpart T)	No
Superphosphoric Acid Plants (Subpart U)	No
Diammonium Phosphate Plants (Subpart V)	No
Triple Superphosphate Plants (Subpart W)	No
Granular Triple Superphosphate Storage Facilities (Subpart X)	No
Coal Preparation Plants (Subpart Y)	No
Ferroalloy Production Facilities (Subpart Z)	No
Steel Plants: Electric Arc Furnaces (Subpart AA)	No
Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels constructed after August 17, 1983 (Subpart AAa)	No
Kraft Pulp Pills (Subpart BB)	No
Glass Manufacturing Plants (Subpart CC)	No
Grain Elevators (Subpart DD)	No
Surface Coating of Metal Furniture (Subpart EE)	No
Stationary Gas Turbines (Subpart GG)	No
Lime Manufacturing Plants (Subpart HH)	No
Lead-acid Battery Manufacturing Plants (Subpart KK)	No
Metallic Mineral Processing Plants (Subpart LL)	No
Automobile and Light-duty Truck Surface Coating Operations (Subpart MM)	No
Phosphate Rock Plants (Subpart NN)	No
Ammonium Sulfate Manufacture Plants (Subpart PP)	No
Graphic Arts Industry: Publication Rotogravure Printing (Subpart QQ)	No
Pressure Sensitive Tape and Label Surface Coating Operations (Subpart RR)	No
Industrial Surface Coating: Large Appliances (Subpart SS)	No
Metal Coil Surface Coating (Subpart TT)	No
Asphalt processing and asphalt roofing manufacture (Subpart UU)	No
Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (Subpart VV)	No
Beverage Can Surface Coating Industry (Subpart WW)	No
Bulk Gasoline Terminals (Subpart XX)	No
New Residential Wood Heaters (Subpart AAA)	No
Rubber Tire Manufacturing Industry (Subpart BBB)	No
Polymer Manufacturing Industry (Subpart DDD)	No
Flexible Vinyl and Urethane Coating and Printing (Subpart FFF)	No
Equipment Leaks of VOC in Petroleum Refineries (Subpart GGG)	No
Synthetic Fiber Production Facilities (Subpart HHH)	No
Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes (Subpart III)	No
Petroleum Dry Cleaners (Subpart JJJ)	No
Onshore Natural Gas Processing Plants (Subpart KKK)	No
Onshore Natural Gas Processing: SO_2 Emissions (Subpart LLL)	No
Synthetic Organic Chemical Manufacturing Industry Distillation Operations (Subpart	No

Table 5-3 Applicable and Non-Applicable New Source Performance Standards (40 CFR Part 60)

Rule Description - 40 CFR Part 60 - New Source Performance Standards	Applicable?
NNN)	
Nonmetallic Mineral Processing Plants (Subpart OOO)	No
Wool Fiberglass Insulation Manufacturing Plants (Subpart PPP)	No
Petroleum Refinery Wastewater System VOC Emissions (Subpart QQQ)	No
Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes (Subpart RRR)	No
Magnetic Tape Coating Facilities (Subpart SSS)	No
Industrial surface coating: Plastic parts for business machines (Subpart TTT)	No
Calciners and Dryers in Mineral Industries (Subpart UUU)	No
Polymeric Coating of Supporting Substrates Facilities (Subpart VVV)	No
Standards of Performance for Municipal Solid Waste Landfills (Subpart WWW)	No
Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001 (Subpart AAAA)	No
Subpart BBBB - Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999	No
Subpart CCCC -- Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001	No
Subpart DDDD -- Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999	No

APPLICABILITY EXPLANATION CODES

A - Regulation applies to regulatory authority.

B - Rules governing ambient air quality standards and/or monitoring or definitions of criteria for air pollution emergency purposes and do not apply to individual sources.

C - Facility is not in this source category.

5.4 Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)

Table 5-4 cites the applicable and inapplicable National Emission Standards for Hazardous Air Pollutants given in 40 CFR Part 61.

Table 5-4 Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)

Rule Description - 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants	Applicable?
Subpart A--General Provisions.	No
Subpart B--Radon Emissions from Underground Uranium Mines.	No
Subpart C--Beryllium.	No
Subpart D--Beryllium Rocket Motor Firing.	No

Table 5-4 Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)

Rule Description - 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants	Applicable?
Subpart E--Mercury.	No
Subpart F--Vinyl Chloride.	No
Subpart H--Emissions of Radionuclides other than Radon from Department of Energy Facilities.	No
Subpart I--Radionuclide Emissions from Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities not covered by Subpart H.	No
Subpart J--Equipment Leaks (Fugitive Emission Sources) of Benzene.	No
Subpart K--Radionuclide Emissions from Elemental Phosphorus Plants.	No
Subpart L--Benzene Emissions from Coke By-Product Recovery Plants.	No
Subpart M--Asbestos.	No
Subpart N--Inorganic Arsenic Emissions from Glass Manufacturing Plants.	No
Subpart O--Inorganic Arsenic Emissions from Primary Copper Smelters.	No
Subpart P--Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities.	No
Subpart Q--Radon Emissions from Department of Energy Facilities.	No
Subpart R--Radon Emission from Phosphogypsum Stacks.	No
Subpart T--Radon Emissions from the Disposal of Uranium Mill Tailings.	No
Subpart V--Equipment Leaks (Fugitive Emission Sources).	No
Subpart W--Radon Emissions from Operating Mill Tailings.	No
Subpart Y--Benzene Emissions from Benzene Storage Vessels.	No
Subpart BB--Benzene Emission from Benzene Transfer Operations.	No
Subpart FF--Benzene Waste Operations.	No

5.5 Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR Part 63)

Table 5-5 cites the applicable and inapplicable National Emission Standards for Hazardous Air Pollutants for Source Categories given in 40 CFR Part.

Table 5-5 Applicable and Inapplicable National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR Part 63)

Rule Description - 40 CFR Part 63- National Emission Standards for Hazardous Air Pollutants for Source Categories	Applicable? (Explanation)
Subpart A – General Provisions	No – not in source category
Subpart F – SOCMI	No – not in source category
Subpart G – SOCMI – Process Vents, Storage Vessels, Transfer Operations	No – not in source category
Subpart H – SOCMI – Equipment Leaks	No – not in source category
Subpart I – Certain Processes Subject to the Negotiated Regulation for Equipment Leaks	No – not in source category
Subpart J – Polyvinyl Chloride and Copolymers Production	No – not in source category
Subpart L – Coke Oven Batteries	No – not in source category
Subpart M – Dry Cleaning Facilities Using Perchloroethylene	No – not in source category
Subpart N – Nard and Decorative Electroplating and Anodizing	No – not in source category
Subpart O – Ethylene Oxide Sterilization	No – not in source category
Subpart Q – Industrial Process Cooling Towers	No – not in source category

Rule Description - 40 CFR Part 63- National Emission Standards for Hazardous Air Pollutants for Source Categories	Applicable? (Explanation)
Subpart R – Gasoline Distribution (Bulk Gasoline Terminals and Pipeline Breakout Stations)	No – not in source category
Subpart S – Pulp and Paper Industry	No – not in source category
Subpart T – Halogenated Solvent Cleaning	No – not in source category
Subpart U – Group I Polymers and Resins	No – not in source category
Subpart W – Epoxy Resins and Non-Nylon Polyamides Production	No – not in source category
Subpart X – Secondary Lead Smelting	No – not in source category
Subpart Y – Marine Tank Vessel Loading Operations	No – not in source category
Subpart AA – National Emission Standards for Hazardous Air Pollutants From Phosphoric Acid Manufacturing Plants	No – not in source category
Subpart BB – National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizers Production Plants	No – not in source category; see Subsection 4.6
Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries	No – not in source category
Subpart DD – National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations	No – not in source category
Subpart EE – National Emission Standards for Magnetic Tape Manufacturing Operations	No – not in source category
Subpart GG – National Emission Standards for Aerospace Manufacturing and Rework Facilities	No – not in source category
Subpart HH – National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities	No – not in source category
Subpart II – National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)	No – not in source category
Subpart JJ – National Emission Standards for Wood Furniture Manufacturing Operations	No – not in source category
Subpart KK – National Emission Standards for the Printing and Publishing Industry	No – not in source category
Subpart LL – National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants	No – not in source category
Subpart MM – National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills	No – not in source category
Subpart OO – National Emission Standards for Tanks – Level 1	No – not in source category
Subpart PP – National Emission Standards for Containers	No – not in source category
Subpart QQ – National Emission Standards for Surface Impoundments	No – not in source category
Subpart RR – National Emission Standards for Individual Drain Systems	No – not in source category
Subpart SS – National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices, and Routing to a Fuel Gas System or a Process	No – not in source category
Subpart TT – National Emission Standards for Equipment Leaks – Control Level 1	No – not in source category
Subpart UU – National Emission Standards for Equipment Leaks – Control Level 2 Standards	No – not in source category
Subpart VV – National Emission Standards for Oil-Water Separators and Organic-Water Separators	No – not in source category
Subpart WW – National Emission Standards for Storage Vessels (Tanks) – Control Level 2	No – not in source category
Subpart XX -- National Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations	No – not in source category
Subpart YY – National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards	No – not in source category
Subpart CCC – National Emission Standards for Hazardous Air Pollutants for Steel Pickling – HCl Process Facilities and Hydrochloric Acid Regeneration Units	No – not in source category
Subpart DDD – National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production	No – not in source category
Subpart GGG – Pharmaceuticals Production	No – not in source category
Subpart JJJ – Polymer and resins II	No – not in source category
Subpart HHH – Natural Gas Transmission and Storage	No – not in source category
Subpart III – Flexible Polyurethane Foam Production	No – not in source category

Rule Description - 40 CFR Part 63- National Emission Standards for Hazardous Air Pollutants for Source Categories	Applicable? (Explanation)
Subpart LLL – Portland Cement Manufacturing	No – not in source category
Subpart MMM – Pesticide Active Ingredient Production	No – not in source category
Subpart NNN – Wool Fiberglass Manufacturing	No – not in source category
Subpart OOO – Polymers and Resins, III Amino Resins, Phenolic Resins	No – not in source category
Subpart PPP – Polyether Polyols Production	No – not in source category
Subpart QQQ – Primary Copper	No – not in source category
Subpart RRR – Secondary Aluminum	No – not in source category
Subpart TTT – Primary Lead Smelting	No – not in source category
Subpart UUU – Petroleum Refineries	No – not in source category
Subpart VVV – POTWs	No – not in source category
Subpart XXX – Ferroalloys Production	No – not in source category
Subpart AAAA – Municipal Solid Waste Landfills	No – not in source category
Subpart CCCC – Manufacturing Nutritional Yeast	No – not in source category
Subpart GGGG – Solvent Extraction for Vegetable Oil	No – not in source category
Subpart HHHH – Wet Formed Fiberglass Mat Production	No – not in source category
Subpart JJJJ – Paper and Other Web	No – not in source category
Subpart NNNN – Large Appliance	No – not in source category
Subpart SSSS – Metal Coil	No – not in source category
Subpart TTTT – Leather Finishing Operations	No – not in source category
Subpart UUUU – Cellulose Production Manufacturing	No – not in source category
Subpart VVVV – Boat Manufacturing	No – not in source category
Subpart XXXX – Tire Manufacturing	No – not in source category
Subpart QQQQQ – Friction Products Manufacturing	No – not in source category

5.6 Specific Applicable and Inapplicable Requirement Discussion

Table 5-6 below discusses in more detail the specific applicable and inapplicable requirements for Idaho Supreme:

Table 5-6 Specific Applicable and Inapplicable Requirements

Citation	Explanation of Applicability
40 CFR 60.40b Subpart Db. Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.	60.40b(a): Subpart Db applies to steam generating units that have a heat input capacity of greater than 100 MMBtu/hr. The maximum steam generating capacity of Boiler #4 is 140 MMBtu/hr. 60.42b(j): By combusting only very low sulfur oil, ISUP will comply with the sulfur dioxide standards of 60.42.b. 60.43b(f): Opacity shall not exceed 20% (6-minute average), except for one 6-minute period per hour of not more than 27% opacity. 60.44b(a): The NOx emissions at the facility shall not exceed: * 0.40 lb/MMBtu heat input for burning residual fuel at high heat release rate. * 0.30 lb/MMBtu heat input for burning residual fuel at low heat release rate. * 0.20 lb/MMBtu heat input for burning diesel fuel and natural gas at high heat release rate. * 0.10 lb/MMBtu heat input for burning diesel fuel and natural gas at low heat release rate.
40 CFR 60.40b Subpart Kb. Standards of Performance for Volatile Organic Liquid Vessels for which Construction, Reconstruction or Modification Commenced After July 23, 1984.	60.110b(b) and (c): Storage vessels with a capacity of less than 19,800 gallons and stage vessels with a capacity of greater than 19,800 gallons and less than 40,000 gallons and with a maximum true vapor pressure of less than 15 kilopascals (kPa) are exempt from the general provisions of 40 CFR 60 and from most of the portions of Subpart Kb. The three ASTs are greater than 19,800 gallons in storage capacity containing liquids with a vapor pressure less than 15 kPa. Therefore the ASTs at the facility qualify for exemptions. 60.116b(b): The facility will keep readily accessible records showing the dimensions of the ASTs and an analysis showing the capacity of the ASTs. These records will be kept at the facility for the life of the ASTs as provided in 60.116b(a).
40 CFR 60.40b Subpart Dc. Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.	60.40c(a): Subpart Db applies to steam generating units that have a heat input capacity of greater than or equal to 10 MMBtu/hr but less than 100 MMBtu/hr. The maximum steam generating capacity of Boiler #3 is 43 MMBtu/hr. 60.43c(c): Opacity shall not exceed 20% (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

6.0 Emission Calculations

Emission calculations, including HAPs, are shown in this section. All pounds per hour and ton per year emissions are identical to those used to determine the emission limits of Tier II permit no. 011-00013. Estimates of grain loading are also shown in this section. An emission inventory is included in this section.

The emission estimates include:

- TANKS 4.0 Output
- MathCad-Grainloading Output
- Grainloading Spreadsheets
- Criteria/Toxics Inventory
- Combustion Spreadsheets
- Process Weight Documents

Emission Inventories

Section # 6.0

CRITERIA EMISSION INVENTORY TABLE - IDAHO SUPREME POTATOES INC.[1]

Source	PM, lb/hr	PM, ton/yr	PM-10, lb/hr	PM-10, ton/yr	SO_2, lb/hr	SO_2, ton/yr	CO, lb/hr	CO, ton/yr	NOx, lb/hr	NOx, ton/yr	VOC, lb/hr	VOC, ton/yr	Com-ments
Fluidized Bed Dryer (fuel burn and process)	1.55	6.79	0.71	3.11	0.004	0.0175	0.57	2.50	1.10	4.82	0.04	0.175	
#4 Bigelow Boiler (fuel burn)	7.48	32.74	7.48	32.74	51.03	223.51	11.45	50.15	30.55	133.81	0.75	3.29	
#3 Cleaver Brooks (fuel burn)	2.30	3.66	2.30	3.66	15.70	25.00	3.52	5.61	11.00	17.52	0.23	0.37	3,185 hr/yr
Dryer Stage A (fuel burn)	0.059	0.26	0.059	0.26	0.005	0.021	0.65	2.85	0.780	3.42	0.043	0.188	
Dryer Stage B (fuel burn)	0.024	0.10	0.024	0.10	0.002	0.008	0.26	1.14	0.31	1.36	0.017	0.075	
Dryer Stage C (fuel burn)	0.024	0.10	0.024	0.10	0.002	0.008	0.26	1.14	0.31	1.36	0.017	0.075	
Secondary Dryer (1st vent) (fuel burn)	0.00205	0.009	0.00205	0.009	0.00015	0.00066	0.0225	0.099	0.027	0.118	0.0015	0.0065	
Secondary Dryer (2nd vent) (fuel burn)	0.00205	0.009	0.00205	0.009	0.00015	0.00066	0.0225	0.099	0.027	0.118	0.0015	0.0065	
Silo Storage A[3]	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage B	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage C	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage D	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage E	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage F	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage G	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage H	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage I	6.40E-02	0.28	6.40E-02	0.28									
Silo Storage J	6.40E-02	0.28	6.40E-02	0.28									
Aggregate Dehydration Process Total[3]	14.47	50.01	6.37	22.00									
Flaker #4[2]	0.61	2.65	0.267	1.17									
Flaker #3	0.61	2.65	0.267	1.17									
Flaker #2	0.61	2.65	0.267	1.17									
Flaker #1	0.61	2.65	0.267	1.17									
Flaker #8	0.61	2.65	0.267	1.17									
Flaker #7	0.61	2.65	0.267	1.17									
Flaker #6	0.61	2.65	0.267	1.17									
Flaker #5	0.61	2.65	0.267	1.17									
Flaker #10	0.61	2.65	0.267	1.17									
Flaker #9	0.61	2.65	0.267	1.17									
Flaker #12	0.61	2.65	0.267	1.17									
Flaker #11	0.61	2.65	0.267	1.17									

CRITERIA EMISSION INVENTORY TABLE - IDAHO SUPREME POTATOES INC.[1]

Source	PM, lb/hr	PM, ton/yr	PM-10, lb/hr	PM-10, ton/yr	SO_2, lb/hr	SO_2, ton/yr	CO, lb/hr	CO, ton/yr	NOx, lb/hr	NOx, ton/yr	VOC, lb/hr	VOC, ton/yr	Com-ments
Dryer Stage A (process)	1.30	3.08	0.51	1.03									
Dryer Stage B (process)	1.30	3.08	0.51	1.03									
Dryer Stage C (process)	1.30	3.08	0.51	1.03									
Secondary Dryer (1st vent) (process)	1.30	3.08	0.51	1.03									
Secondary Dryer (2nd vent) (process)	1.30	3.08	0.51	1.03									
Space Heater South	0.06	0.18	0.06	0.18	0.0048	0.0145	0.670	2.03	0.80	2.42	0.04	0.10	6,048 hr/yr
Space Heater North	0.06	0.18	0.06	0.18	0.0048	0.0145	0.675	2.03	0.80	2.42	0.04	0.10	6,048 hr/yr
Space Heater East	0.11	0.33	0.11	0.33	0.009	0.027	1.26	3.81	1.50	4.54	0.08	0.25	6,048 hr/yr
Miscellan-eous Space Heaters	0.0147	0.044	0.0147	0.044	0.001	0.003	0.16	0.048	0.19	0.575	0.01	0.03	6,048 hr/yr
Tank 1											0.0027	0.012	
Tank 2											0.0046	0.02	
Tank 3											0.0046	0.02	
Tank 5											0.0002	0.001	
Tank 6											0.0002	0.0008	
TOTAL	**26.15**	**94.41**	**17.24**	**62.71**	**66.76**	**248.63**	**19.51**	**71.50**	**47.39**	**172.47**	**1.28**	**4.71**	

[1] See following tables for emission calculations for each source and different fuel types.

[2] Silo/Flaker emissions form Teir II OP Permit No. 011-00013 Tech Memo.

[3] The aggregate dehydration process consists of 12 flaker lines, 10 storage silos and process emissions from the Secondary Dryers and Dryers A, B and C.

HAZARDOUS AIR POLLUTANT EMISSIONS INVENTORY

Pollutant	Non-Boiler Sources		Boilers		Total	
	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (lb/hr)	Emissions (tons/yr)	Emissions (lb/hr)	Emissions (tons/yr)
2-Methylnaphthalene	1.31E-06	4.64E-06	4.28E-06	1.59E-05	5.58E-06	2.06E-05
3-Methylchloranthrene	9.79E-08	3.48E-07	3.21E-07	1.19E-06	4.19E-07	1.54E-06
7,12-Dimethylbenz(a)anthracene	8.70E-07	3.09E-06	2.85E-06	1.06E-05	3.72E-06	1.37E-05
Acenaphthylene			2.15E-07	8.01E-07	2.15E-07	8.01E-07
Acenapthene	9.79E-08	3.48E-07	1.79E-05	6.68E-05	1.80E-05	6.71E-05
Anthracene	1.31E-07	4.64E-07	1.04E-06	3.86E-06	1.17E-06	4.33E-06
Antimony			4.46E-03	1.66E-02	4.46E-03	1.66E-02
Arsenic	1.09E-05	3.87E-05	1.12E-03	4.18E-03	1.13E-03	4.22E-03
Benz(a)anthracene	9.79E-08	3.48E-07	3.41E-06	1.27E-05	3.51E-06	1.30E-05
Benzene	1.14E-04	4.06E-04	3.74E-04	1.39E-03	4.88E-04	1.80E-03
Benzo(a)pyrene	6.53E-08	2.32E-07	2.14E-07	7.97E-07	2.79E-07	1.03E-06
Benzo(b)fluoranthene	9.79E-08	3.48E-07			9.79E-08	3.48E-07
Benzo(b,k)fluoranthene			1.26E-06	4.68E-06	1.26E-06	4.68E-06
Benzo(g,h,i)perylene	6.53E-08	2.32E-07	2.02E-06	7.53E-06	2.09E-06	7.77E-06
Benzo(k)fluoranthene	9.79E-08	3.48E-07			9.79E-08	3.48E-07
Beryllium	6.53E-07	2.32E-06	5.49E-04	2.05E-03	5.50E-04	2.05E-03
Cadmium	5.98E-05	2.13E-04	3.38E-04	1.26E-03	3.98E-04	1.47E-03
Chromium	7.61E-05	2.71E-04	7.18E-04	2.67E-03	7.94E-04	2.95E-03
Chromium VI			2.11E-04	7.85E-04	2.11E-04	7.85E-04
Chrysene	9.79E-08	3.48E-07	2.02E-06	7.53E-06	2.12E-06	7.88E-06
Cobalt	4.57E-06	1.62E-05	5.12E-03	1.91E-02	5.12E-03	1.91E-02
Dibenzo(a,h)anthracene	6.53E-08	2.32E-07	1.42E-06	5.29E-06	1.48E-06	5.52E-06
Dichlorobenzene	6.53E-05	2.32E-04	2.14E-04	7.97E-04	2.79E-04	1.03E-03
Ethylbenzene			5.41E-05	2.01E-04	5.41E-05	2.01E-04
Fluoranthene	1.63E-07	5.80E-07	4.11E-06	1.53E-05	4.28E-06	1.59E-05
Fluorene	1.52E-07	5.42E-07	3.80E-06	1.41E-05	3.95E-06	1.47E-05
Formaldehyde	4.08E-03	1.45E-02	2.81E-02	1.04E-01	3.21E-02	1.19E-01
Hexane	9.79E-02	3.48E-01	3.21E-01	1.19E+00	4.19E-01	1.54E+00
Indeno(1,2,3-cd)pyrene	9.79E-08	3.48E-07	1.82E-06	6.77E-06	1.92E-06	7.12E-06
Lead			1.28E-03	4.78E-03	1.28E-03	4.78E-03
Manganese	2.07E-05	7.35E-05	2.55E-03	9.50E-03	2.57E-03	9.57E-03
Mercury	1.41E-05	5.03E-05	5.49E-04	2.05E-03	5.63E-04	2.10E-03
Naphthalene	3.32E-05	1.18E-04	9.61E-04	3.58E-03	9.94E-04	3.70E-03
Nickel	1.14E-04	4.06E-04	7.18E-02	2.67E-01	7.19E-02	2.68E-01
OCDD			2.64E-09	9.81E-09	2.64E-09	9.81E-09
o-Xylene			9.27E-05	3.45E-04	9.27E-05	3.45E-04
Phenanathrene	9.24E-07	3.29E-06	8.93E-06	3.32E-05	9.85E-06	3.65E-05
Phosphorous			8.04E-03	2.99E-02	8.04E-03	2.99E-02
Pyrene	2.72E-07	9.67E-07	3.61E-06	1.35E-05	3.88E-06	1.44E-05
Selenium	1.31E-06	4.64E-06	2.75E-03	1.02E-02	2.75E-03	1.02E-02
Toluene	1.85E-04	6.58E-04	5.27E-03	1.96E-02	5.45E-03	2.03E-02
Total:	1.03E-01	3.65E-01	4.55E-01	1.70E+00	5.58E-01	2.06E+00
Note: POM =					3.03E-05	1.12E-04

TOXIC AIR POLLUTANT EMISSION INVENTORY

TABLE 1. NON-CARCINOGENS

Pollutant	Max. Hourly Emissions (lb/hr)	Emissions (tons/yr)
Antimony	4.4625E-03	1.6619E-02
Barium	2.4238E-03	8.9864E-03
Chromium	7.9438E-04	2.9457E-03
Cobalt	5.1216E-03	1.9073E-02
Copper	1.5422E-03	5.7357E-03
Ethylbenzene	5.4060E-05	2.0133E-04
Fluoride	3.1705E-02	1.1807E-01
Hexane	4.1868E-01	1.5430E+00
Manganese	2.5707E-03	9.5700E-03
Mercury	5.6323E-04	2.0955E-03
Molybdenum	7.2877E-04	2.7040E-03
Naphthalene	9.9367E-04	3.6950E-03
Pentane	6.0476E-01	2.2288E+00
Phosphorous	8.0410E-03	2.9946E-02
Selenium	2.7468E-03	1.0231E-02
Toluene	5.4549E-03	2.0284E-02
o-Xylene	9.2650E-05	3.4504E-04
Zinc	2.6312E-02	9.7726E-02

TABLE 2. CARCINOGENS

Pollutant	Max. Hourly Emissions (lb/hr)	Emissions (tons/yr)
Arsenic	1.1E-03	4.2E-03
Benzene	4.9E-04	1.8E-03
Beryllium	5.3E-04	2.0E-03
Cadmium	4.0E-04	1.5E-03
Chromium VI	2.1E-04	7.9E-04
Formaldehyde	3.2E-02	1.2E-01
Nickel	7.2E-02	2.7E-01
Benzo(a)pyrene	2.8E-07	1.0E-06
Benz(a)anthracene	3.5E-06	1.3E-05
Benzo(b,k)fluoranthene	1.43E-06	5.4E-06
Chrysene	2.1E-06	7.6E-06
Dibenzo(a,h)anthracene	1.5E-06	5.4E-06
Indeno(1,2,3-cd)pyrene	1.9E-06	6.9E-06
Total PAHs	1.1E-05	3.9E-05

Calculations

Grainloading Emissions for # 2 Diesel - Idaho Supreme

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from # 2 Diesel combustion results in an approximated grain loading well below the standard of 0.05 gr/dscf. Therefore, as long as # 2 Diesel is the only form of fuel being combusted in Boiler # 3 and Boiler # 4 then the permittee is in compliance with the grain loading standard.

1. **Correct the flue gas volume to the altitude of Firth, Idaho:**

   Altitude := 4462 ft

   Subtract altitude pressure correction factor (inches of Hg) from standard atmospheric pressure at sea level to obtain the corrected flue gas pressure.

   $\text{Correction} := 0.01 \cdot \frac{\text{Altitude}}{10}$ $\quad \text{Correction} = 4.462$ inch of Hg $\frac{.1\ \text{Hg}}{100\ \text{ft}}$

   StandAtmPress := 29.92 inch of Hg

   CorrFluePress := StandAtmPress – Correction

   CorrFluePress = 25.458 inch of Hg

2. Using the ideal gas law and knowing that n, R and T will remain constant:

   Where,

   V_2 = The gas volume corrected to altitude (dscf)

   $V_1 := 9199.5$ $\frac{\text{dscf}}{\text{MMBTU}}$ The known gas volume

   P_1 := StandAtmPress The pressure of the know gas volume (29.92 inchs of Hg)

   P_2 := CorrFluePress The pressure of the corrected gas volume

   $V_2 := P_1 \cdot \frac{V_1}{P_2}$ $\quad V_2 = 1.081 \cdot 10^4$ $\frac{\text{dscf}}{\text{MMBTU}}$

   For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,

   Where,

   F_2 = The gas volume corrected to 3% oxygen

   $F_1 := V_2$ The altitude corrected flue gas volume

$$F_2 := F_1 \cdot \frac{20.9}{20.9 - 3.0} \qquad F_2 = 1.262 \cdot 10^4 \ \frac{dscf}{MMBTU}$$

4. Determine the combustion volume of one gal.

Where,

CombustVol = The volume of flue gas created by the combustion one gal of # 2 Diesel.

$$Heat2Diesel := 0.140 \ \frac{MMBTU}{gal}$$

$$CombustVol := Heat2Diesel \cdot F_2$$

$$CombustVol = 1.767 \cdot 10^3 \ \frac{dscf}{gal}$$

5. Determine the grain loading per dscf of flue gas.

Where,

GrainLoading = The amount of grains per dscf.

$$PoundsPM := 0.0033 \ lb\ PM/gal \qquad \frac{.0033 \ lb/gal}{1.767 \times 10^3 \ dscf/gal} =$$

$$GrainsPM := 7000 \ \frac{Grains}{lb \cdot PM}$$

$$GrainLoading := \frac{PoundsPM \cdot GrainsPM}{CombustVol}$$

$$GrainLoading = 0.013 \ \frac{Grains}{dscf} < 0.05 \ \frac{Grains}{dscf}$$

Grainloading Emissions for # 4 Residual Oil - Idaho Supreme

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from # 4 Residual Oil combustion results in an approximated grain loading well below the standard of 0.05 gr/dscf. Therefore, as long as # 4 Residual Oil is the only form of fuel being combusted in Boiler # 3 and Boiler # 4 then the permittee is in compliance with the grain loading standard.

1. **Correct the flue gas volume to the altitude of Firth, Idaho:**

   Altitude := 4462 ft

   Subtract altitude pressure correction factor (inches of Hg) from standard atmospheric pressure at sea level to obtain the corrected flue gas pressure.

   $\text{Correction} := 0.01 \cdot \frac{\text{Altitude}}{10}$ Correction = 4.462 inch of Hg

   StandAtmPress := 29.92 inch of Hg

   CorrFluePress := StandAtmPress – Correction

   CorrFluePress = 25.458 inch of Hg

2. **Using the ideal gas law and knowing that n, R and T will remain constant:**

   Where,

   V_2 = The gas volume corrected to altitude (dscf)

   $V_1 := 9199.5 \ \frac{\text{dscf}}{\text{MMBTU}}$ The known gas volume

   P_1 := StandAtmPress The pressure of the know gas volume (29.92 inchs of Hg)

   P_2 := CorrFluePress The pressure of the corrected gas volume

   $V_2 := P_1 \cdot \frac{V_1}{P_2}$ $V_2 = 1.081 \cdot 10^4 \ \frac{\text{dscf}}{\text{MMBTU}}$

3. **For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,**

   Where,

   F_2 = The gas volume corrected to 3% oxygen

   $F_1 := V_2$ The altitude corrected flue gas volume

$$F_2 := F_1 \cdot \frac{20.9}{20.9 - 3.0} \qquad F_2 = 1.262 \cdot 10^4 \ \frac{dscf}{MMBTU}$$

4. Determine the combustion volume of one gal.

Where, ∎

CombustVol = The volume of flue gas created by the combustion one gal of # 4 Residual.

.146 combustion evaluation.

$$Heat4Fuel := 0.150 \ \frac{MMBTU}{gal}$$

$$CombustVol := Heat4Fuel \cdot F_2 \qquad .146 \frac{mmBtu}{gal} \quad 1.262 \times 10^4 \frac{dscf}{mmBtu}$$

$$CombustVol = 1.894 \cdot 10^3 \ \frac{dscf}{gal} \qquad 1843 \frac{dscf}{gal}$$

Determine the grain loading per dscf of flue gas.

Where, ∎

GrainLoading = The amount of grains per dscf.

$$PoundsPM := 0.0085 \ lb\ PM/gal \qquad \frac{.0085 \frac{lb}{gal}}{1843 \frac{dscf}{gal}} = 0.032 \frac{grains}{dscf}$$

$$GrainsPM := 7000 \ \frac{Grains}{lb \cdot PM}$$

$$GrainLoading := \frac{PoundsPM \cdot GrainsPM}{CombustVol}$$

$$GrainLoading = 0.031 \ \frac{Grains}{dscf} < 0.05 \ \frac{Grains}{dscf}$$

6

Grainloading Emissions for # 5 Residual Oil - Idaho Supreme

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from # 5 Residual Oil combustion results in an approximated grain loading well below the standard of 0.05 gr/dscf. Therefore, as long as # 5 Residual Oil is the only form of fuel being combusted in Boiler # 3 and Boiler # 4 then the permittee is in compliance with the grain loading standard.

1. Correct the flue gas volume to the altitude of Firth, Idaho:

   Altitude := 4462 ft

   Subtract altitude pressure correction factor (inches of Hg) from standard atmospheric pressure at sea level to obtain the corrected flue gas pressure.

   $$\text{Correction} := 0.01 \cdot \frac{\text{Altitude}}{10} \qquad \text{Correction} = 4.462 \quad \text{inch of Hg}$$

   StandAtmPress := 29.92 inch of Hg

   CorrFluePress := StandAtmPress – Correction

   CorrFluePress = 25.458 inch of Hg

2. Using the ideal gas law and knowing that n, R and T will remain constant:

   Where,

   V_2 = The gas volume corrected to altitude (dscf)

   $V_1 := 9199.5 \quad \frac{\text{dscf}}{\text{MMBTU}}$ The known gas volume

   P_1 := StandAtmPress The pressure of the know gas volume (29.92 inchs of Hg)

   P_2 := CorrFluePress The pressure of the corrected gas volume

   $$V_2 := P_1 \cdot \frac{V_1}{P_2} \qquad V_2 = 1.081 \cdot 10^4 \quad \frac{\text{dscf}}{\text{MMBTU}}$$

3. For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,

   Where,

   F_2 = The gas volume corrected to 3% oxygen

   $F_1 := V_2$ The altitude corrected flue gas volume

$$F_2 := F_1 \cdot \frac{20.9}{20.9 - 3.0} \qquad F_2 = 1.262 \cdot 10^4 \ \frac{dscf}{MMBTU}$$

4. Determine the combustion volume of one gal.

Where,

CombustVol = The volume of flue gas created by the combustion one gal of # 5 Residual.

$$Heat5Fuel := 0.150 \ \frac{MMBTU}{gal}$$

$$CombustVol := Heat5Fuel \cdot F_2 \qquad (.15 \times 1.262 \times 10^4)$$

$$CombustVol = 1.894 \cdot 10^3 \ \frac{dscf}{gal}$$

5. Determine the grain loading per dscf of flue gas.

Where,

GrainLoading = The amount of grains per dscf.

? #6

$$PoundsPM := 0.0115 \ lb\ PM/gal \qquad \frac{.0115 \frac{lb}{gal}}{1.894 \times 10^3 \frac{dscf}{gal}} = .043 \frac{gr.}{dscf} @ 3\% O_2$$

$$GrainsPM := 7000 \ \frac{Grains}{lb \cdot PM}$$

$$GrainLoading := \frac{PoundsPM \cdot GrainsPM}{CombustVol}$$

$$GrainLoading = 0.043 \ \frac{Grains}{dscf} < 0.05 \ \frac{Grains}{dscf}$$

Grainloading Emissions for # 6 Residual Oil - Idaho Supreme

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from # 6 Residual Oil combustion results in an approximated grain loading well below the standard of 0.05 gr/dscf. Therefore, as long as # 6 Residual Oil is the only form of fuel being combusted in Boiler # 3 and Boiler # 4 then the permittee is in compliance with the grain loading standard.

Correct the flue gas volume to the altitude of Firth, Idaho:

Altitude := 4462 ft

Subtract altitude pressure correction factor (inches of Hg) from standard atmospheric pressure at sea level to obtain the corrected flue gas pressure.

$$\text{Correction} := 0.01 \cdot \frac{\text{Altitude}}{10} \qquad \text{Correction} = 4.462 \quad \text{inch of Hg}$$

StandAtmPress := 29.92 inch of Hg

CorrFluePress := StandAtmPress – Correction

CorrFluePress = 25.458 inch of Hg

2. Using the ideal gas law and knowing that n, R and T will remain constant:

Where, ▪

V_2 = The gas volume corrected to altitude (dscf)

$V_1 := 9199.5 \quad \frac{\text{dscf}}{\text{MMBTU}}$ The known gas volume

P_1 := StandAtmPress The pressure of the know gas volume (29.92 inchs of Hg)

P_2 := CorrFluePress The pressure of the corrected gas volume

$$V_2 := P_1 \cdot \frac{V_1}{P_2} \qquad V_2 = 1.081 \cdot 10^4 \quad \frac{\text{dscf}}{\text{MMBTU}}$$

3. For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,

Where, ▪

F_2 = The gas volume corrected to 3% oxygen

$F_1 := V_2$ The altitude corrected flue gas volume

$$F_2 := F_1 \cdot \frac{20.9}{20.9 - 3.0} \qquad F_2 = 1.262 \cdot 10^4 \quad \frac{dscf}{MMBTU}$$

4. Determine the combustion volume of one gal.

Where,

CombustVol = The volume of flue gas created by the combustion one gal of #6 Residual.

$$Heat6Fuel := 0.150 \quad \frac{MMBTU}{gal}$$

$$CombustVol := Heat6Fuel \cdot F_2 \qquad \left(.148 \frac{mmBtu}{gal} \; 1.262 \times 10^4 \frac{dscf}{mmBtu}\right)$$

$$CombustVol = 1.894 \cdot 10^3 \quad \frac{dscf}{gal} \qquad 1867.8 \frac{dscf}{gal}$$

5. Determine the grain loading per dscf of flue gas.

Where,

GrainLoading = The amount of grains per dscf.

$$PoundsPM := 0.00932 \quad lb\ PM/gal \qquad \frac{.00932 \frac{lb}{gal}}{1867.8 \frac{dscf}{gal}} = .035 \frac{gr}{dscf} @ 3\% O_2$$

$$GrainsPM := 7000 \quad \frac{Grains}{lb \cdot PM}$$

$$GrainLoading := \frac{PoundsPM \cdot GrainsPM}{CombustVol}$$

$$GrainLoading = 0.034 \quad \frac{Grains}{dscf} < 0.05 \quad \frac{Grains}{dscf}$$

Grainloading Emissions for Natural Gas - Idaho Supreme

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from natural gas combustion results in an approximated grain loading well below the standard of 0.015 gr/dscf. Therefore, as long as natural gas is the only form of fuel being combusted in Boiler # 3, Boiler # 4, Space Heaters, Dryers and Fluidized Bed then the permittee is in compliance with the grain loading standard.

1. Correct the flue gas volume to the altitude of Firth, Idaho:

   Altitude := 4462 ft

   Subtract altitude pressure correction factor (inches of Hg) from standard atmospheric pressure at sea level to obtain the corrected flue gas pressure.

   $\text{Correction} := 0.01 \cdot \frac{\text{Altitude}}{10}$ Correction = 4.462 inch of Hg

   StandAtmPress := 29.92 inch of Hg

   CorrFluePress := StandAtmPress – Correction

   CorrFluePress = 25.458 inch of Hg

2. Using the ideal gas law and knowing that n, R and T will remain constant:

   Where, ▪

   V_2 = The gas volume corrected to altitude (dscf)

   $V_1 := 8715.3 \frac{\text{dscf}}{\text{MMBTU}}$ The known gas volume

   $P_1 :=$ StandAtmPress The pressure of the know gas volume (29.92 inchs of Hg)

   $P_2 :=$ CorrFluePress The pressure of the corrected gas volume

   $V_2 := P_1 \cdot \frac{V_1}{P_2}$ $V_2 = 1.024 \cdot 10^4$ $\frac{\text{dscf}}{\text{MMBTU}}$

3. For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,

   Where, ▪

   F_2 = The gas volume corrected to 3% oxygen

   $F_1 := V_2$ The altitude corrected flue gas volume

$$F_2 := F_1 \cdot \frac{20.9}{20.9 - 3.0} \qquad F_2 = 1.196 \cdot 10^4 \quad \frac{dscf}{MMBTU}$$

4. Determine the combustion volume of one scf.

Where, ∎

CombustVol = The volume of flue gas created by the combustion one cubic foot of natural gas

$$HeatCH4 := 0.001050 \quad \frac{MMBTU}{scf}$$

$$CombustVol := HeatCH4 \cdot F_2$$

$$CombustVol = 12.557 \quad \frac{dscf}{scf}$$

5. Determine the grain loading per dscf of flue gas.

Where, ∎

GrainLoading = The amount of grains per dscf.

$$PoundsPM := 0.0000076 \quad lb\ PM/scf$$

$$GrainsPM := 7000 \quad \frac{Grains}{lb \cdot PM}$$

$$GrainLoading := \frac{PoundsPM \cdot GrainsPM}{CombustVol}$$

$$GrainLoading = 4.237 \cdot 10^{-3} \quad \frac{Grains}{dscf} < 0.015 \quad \frac{Grains}{dscf}$$

Grainloading Emissions for Propane - Idaho Supreme

Emission factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions from Propane combustion results in an approximated grain loading well below the standard of 0.05 gr/dscf. Therefore, as long as Propane is the only form of fuel being combusted in Boiler # 3, Boiler # 4, Space Heaters, Dryers and Fluidized Bed then the permittee is in compliance with the grain loading standard.

1. Correct the flue gas volume to the altitude of Firth, Idaho:

Altitude := 4462 ft

Subtract altitude pressure correction factor (inches of Hg) from standard atmospheric pressure at sea level to obtain the corrected flue gas pressure.

$$\text{Correction} := 0.01 \cdot \frac{\text{Altitude}}{10} \qquad \text{Correction} = 4.462 \quad \text{inch of Hg}$$

StandAtmPress := 29.92 inch of Hg

CorrFluePress := StandAtmPress – Correction

CorrFluePress = 25.458 inch of Hg

2. Using the ideal gas law and knowing that n, R and T will remain constant:

Where,

V_2 = The gas volume corrected to altitude (dscf)

$V_1 := 8715.3 \quad \frac{\text{dscf}}{\text{MMBTU}}$ The known gas volume

P_1 := StandAtmPress The pressure of the know gas volume (29.92 inchs of Hg)

P_2 := CorrFluePress The pressure of the corrected gas volume

$$V_2 := P_1 \cdot \frac{V_1}{P_2} \qquad V_2 = 1.024 \cdot 10^4 \quad \frac{\text{dscf}}{\text{MMBTU}}$$

3. For 3% oxygen, using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,

Where,

F_2 = The gas volume corrected to 3% oxygen

$F_1 := V_2$ The altitude corrected flue gas volume

$$F_2 := F_1 \cdot \frac{20.9}{20.9 - 3.0} \qquad F_2 = 1.196 \cdot 10^4 \ \frac{dscf}{MMBTU}$$

4. Determine the combustion volume of one gal.

Where, ▪

CombustVol = The volume of flue gas created by the combustion one gal of Prpane.

$$HeatPropane := 0.091 \ \frac{MMBTU}{gal}$$

$$CombustVol := HeatPropane \cdot F_2$$

$$CombustVol = 1.088 \cdot 10^3 \ \frac{dscf}{gal}$$

Determine the grain loading per dscf of flue gas.

Where, ▪

GrainLoading = The amount of grains per dscf.

$$PoundsPM := 0.0006 \ lb\ PM/gal$$

$$GrainsPM := 7000 \ \frac{Grains}{lb \cdot PM}$$

$$GrainLoading := \frac{PoundsPM \cdot GrainsPM}{CombustVol}$$

$$GrainLoading = 3.859 \cdot 10^{-3} \ \frac{Grains}{dscf} < 0.05 \ \frac{Grains}{dscf}$$

IDAPA 58.01.01.701: Particulate Matter – New Equipment Process Weight Limitations

The facility operates 12 process dehydration lines, 10 storage silos and 5 dryers that are individual sources of PM emissions. Based on the mass balance presented in Section 3 of the Tier II Operating Permit 011-00013 Technical Memorandum, the emissions to process weight ratio (E/PW) for the dehydration lines is 0.0000995. Two equations for determining PM emissions are given in IDAPA 58.01.01.701:

Equation 1:	$E = 0.045(PW)^{0.60}$	$0<PW<9,250$
Equation 2:	$E = 1.10(PW)^{0.25}$	$9,250<PW$

Where E is the emissions rate and PW is the process throughput, both in pounds an hour. These equations can be rearranged to give the E/PW ratio.

Equation 1a:	$E/PW = 0.045(PW)^{-0.40}$	$0<PW<9,250$
Equation 2a:	$E/PW = 1.10(PW)^{-0.75}$	$9,250<PW$

Substituting the maximum value for PW of 9,250 lb/hr in Equation 1a, and the maximum throughput (72,338 lb/hr) into Equation 2a, the results are:

$E/PW = 0.0017$	(Equation 1a)
$E/PW = 0.000294$	(Equation 2a)

By comparison, these values are greater than the E/PW value determined by the mass balance performed by Idaho Supreme Potatoes (0.0000995); therefore, the facility is in compliance with the process weight limitations.

FLUIDIZED BED DRYER

A. Fuel Combustion

Two Maxon burners provide the required heat for final dehydration. These will operate at a maximum rate of 3.5 million BTU per hour. Product drying rate sets the actual heat input demand.

All emissions are calculated using 8,760 hours over a 12-month period. Actual run time will be less. The objective with this exaggerated schedule is to simplify any required record keeping and demonstrate compliance under maximum potential capabilities.

The potential emissions were calculated using the following parameters.

1. Natural Gas Emission Factors

Parameter	Factor
Heat Content of Gas	1,027 BTU / scf (Twin Falls, NW Pipeline)

Natural Gas Emissions			
Pollutant	**Emission Factor Source**	**Emission Factor**	**Emission Rate, lb/hr**
Particulate Matter and PM-10	AP-42, Table 1.4-2	7.6 lb / 10^6 scf gas combusted	0.052 lb/hr
Sulfur Dioxide	AP-42, Table 1.4-2	0.6 lb / 10^6 scf	0.004 lb/hr
Carbon Monoxide	AP-42, Table 1.4-1	84 lb / 10^6 scf	0.57 lb/hr
Nitrogen Oxides	AP-42, Table 1.4-1	100 lb / 10^6 scf	0.68 lb/hr
VOC	AP-42, Table 1.4-2	5.5 lb / 10^6 scf	0.04 lb/hr

2. Propane Emission Factors

Parameter	Factor
Fuel Consumption, gal/hr	78 gal/hr

Propane Fuel Emissions			
Pollutant	**Emission Factor Source**	**Emission Factor**	**Emission Rate, lb/hr**
Particulate Matter and PM-10	AP-42, Table 1.5-1	0.4 lb / 10^3 gal	0.031 lb/hr
Sulfur Dioxide	AP-42, Table 1.5-1	0.1S lb / 10^3 gal	1.5 x 10^{-5} lb/hr

Carbon Monoxide	AP-42, Table 1.5-1	1.9 lb / 10^3 gal	0.15 lb/hr
Nitrogen Oxides	AP-42, Table 1.5-1	14 lb / 10^3 gal	1.1 lb/hr
VOC (as TOC)	AP-42, Table 1.5-1	0.5 lb / 10^3 gal	0.04 lb/hr

Note: S = sulfur fuel content in grains/100 ft^3. At approximately 15 ppm or 1.1 x 10^{-5} weight fraction, S =

(1.1 x 10^{-5})(4.2 lb/gal)(78 gal/hr)(7,000 grain/lb)(100)/(60 min/hr)/(26,000 ft^3/min)

= 0.002 grains/100 ft^3

Note that the density is 4.2 lb/gal, and the exhaust flow rate is 26,000 ft^3/min.

sulfur concentration
Gas Processors Association Engineering Data Book (Ninth Edition, 1972)
15 gr/100 scf for commercial propane
Santa Barbara County Air Pollution control district

B. Process Particulate Emissions

In AP-42, Appendix B.1-43, particulate emissions factors for Cereal Drying are given. The proposed process most closely resembles Cereal Drying. The general emission factor for particulate matter (PM) is 1.5 pounds per ton of material dried. This is derived from the AP-42 uncontrolled PM-10 emission factor of 0.20 kg/Mg; with PM-10 at 44% of PM, and converting to lb/hr, the PM emission factor is 1.5 lb/ton. The amount of material processed is 2,000 lb/hr.

Process Emission Factors		
Emission	**Emission Factor**	**Emission Rate, lb/hr**
PM	1.5 lb / ton of processed material	1.5 lb/hr
PM-10	0.66 lb / ton of processed material	0.66 lb/hr

III. HOURLY AND ANNUAL EMISSIONS ESTIMATES

For fuel combustion, the higher of the two emission rates from propane or natural gas are used to represent maximum potential emissions from combustion sources.

Emissions Estimates for Fluidized Bed Dryer		
Pollutant	**Maximum lb/hr Emission Rate**	**Total Emissions for 8,760 Hours per 12 Month Period**
PM	1.55 lb/hr	6.79 tons
PM-10	0.71 lb/hr	3.11 tons
SO_2	0.004 lb/hr	0.0175 tons
NOx	1.1 lb/hr	4.8 tons
CO	0.57 lb/hr	2.5 tons
VOC	0.04 lb/hr	0.175 tons

.117 .512

Combustion Sources—Criteria Emissions

#4 Boiler #6 Residual Oil

Criteria Pollutant Estimates, >100 MMBTU/hr (AP-42, Tables 1.3-1 and 1.3-2, 9/98)								
	Pollutant							
	SO_2		SO_3		NO_X	CO	PM	TOC
Emission Factor, lb/1000 gal	157	S	5.7	S	32	5	9.19S + 3.22 + 1.5	1.04
% S in fuel:								
0.5								
Maximum gal/hr								
650								
Maximum hrs/yr								
8,760								
Emissions, lb/hr No control	51.025		1.9		20.8	3.25	6.1	0.7
Emissions, ton/yr No control	223.48		8.1139		91.10	14.24	26.5	3.0

S = weight % sulfur in fuel